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JOURNAL OF
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9_D.

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EDITORIAL



"Please convey to the Royal Family on behalf of members of Wireless Institute of Australia sincere sympathy on passing of His Majesty King George VI."

These few simple words by cablegram to the Royal Family through the office of the Australian High Commissioner in London expressed the sadness in the hearts of all when the news of His Majesty's passing on the morning of 6th February, 1952, was received in Australia.

To every loyal subject, this news came as a sudden and unexpected shock, although we were all aware of the condition of His Majesty's health which necessitated cancelling his Australian Tour.

By his devotion to his people and Empire, King George VI. set an example that bears no criticism, but will create a niche in the lineage of the British Monarchy which all the future generations of the British race will look back upon with great respect.

As citizens of the British Commonwealth of Nations we can learn a great lesson from our late King and

thereby further one of his cherished aims in life—"For all classes to learn to know and understand each other better."

The Radio Amateurs of the world—and our Empire in particular—have fine opportunities to implement this understanding.

In mourning his loss, the memory of a Monarch who gave his life in service and duty to his people will be revered by all mankind.

The principles of home life so simply adhered to by His Majesty and the high example set by his democratic leadership will surely be the foundation on which the British Nation will stand firm forever.

We honour our new sovereign—Queen Elizabeth II.—and to her pledge our loyalty as British subjects. Though she is young to shoulder the heavy tasks and responsibilities of a ruling Queen, she has, in her ten years of public life, established herself in the right of her own personality as one of the great individuals of the Royal line who will lead the youth of the Nation to great heights of purpose and achievement.

"GOD SAVE THE QUEEN."

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THE "QX"

Combining Selectivity, Sensitivity and Simplicity in a New Type I.F. Amplifier

BY K. RUDKIN,* A.M.I.R.E., VK2DQG

Have you ever wished for a simple way of improving the gain and selectivity of your receiver without recourse to all those "back-to-back" i.f. transformers, 100 Kc. outriggers, or crystal filters? You have? Well read on brother, this is what you have been waiting for.

Browsing through some copies of "Electronics," I came across an article on a simple Q multiplier. It took but a short time to realise that here was something that could not be overlooked from a Ham point of view, promising as it did a tremendous increase in selectivity together with a gain equalling, if not exceeding, that of two conventional i.f. stages and with only one, yes one tuned circuit.

I will admit that at first glance it appeared fantastic that a circuit Q of 15,000 or more could be so easily obtained, but a careful perusal of the article convinced me that this was no fallacy but a very definite fact.

It is neither my desire nor intention to present a series of mathematical formulae proving that "this here" equals "that there," but to prepare this article in such a manner that it is clearly understood by all those readers whose interest is primarily practical. However, if mathematically inclined readers wish to study the derivation of the circuit, I refer them to the original "Electronics" article.

It is well known that the Q or efficiency factor of a tuned circuit is the ratio of reactance to resistance.

Now suppose that in parallel with this circuit there appears a network having a negative resistance characteristic. The negative resistance thus applied tends to reduce or even cancel out the original positive resistance. As the effective resistance therefore becomes less, the circuit Q is greatly multiplied.

Beginning with a tuned circuit already having as high a Q as practical, it is now possible to reach undreamed of values of Q by the comparatively simple method of controlled positive feedback. As an increase of Q also means a proportional increase of selectivity, the high value realised provides us with a corresponding high degree of selectivity.

A similar effect is obtained in the ordinary regenerative amplifier or detector circuit, but these, as is well known, lack a most important char-

* View Street, Maitland, N.S.W.

† "Simplified 'Q' Multiplier," H. E. Harris, "Electronics," May, 1951, page 130.

acteristic, that of stability, the slightest misadjustment or voltage variation causing violent oscillation. Not only this, but the variation of the feedback control invariably produces a corresponding variation in frequency.

The circuit shown in the accompanying Fig. 1 not only provides the necessary feedback to give the effective Q multiplication, but the mean frequency is independent of the feedback control and furthermore the circuit is absolutely free from oscillatory tendencies.

It will be noted that the basis of this circuit is the cathode follower which has the correct phase relation plus a high degree of stability. The cathode follower nevertheless has a gain of less than unity and so to realise an active gain, a further element must necessarily be introduced. This is taken care of by arranging the input circuit to represent an auto-transformer equivalent giving the required step-up in gain to the grid of the valve.

This now means that the circuit shown combines the following desirable characteristics: high selectivity, high gain, absolute stability and simplicity.

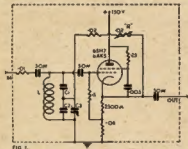


Fig. 1

The first practical application was made at 1550 Kc., being the first i. channel in my communications receiver. The installation however, was temporary only, to discover its possibilities, and I admit that not much care was taken in the construction of the unit, the basis of which was a 6SH7 valve and one winding from a 1500 Kc. i.f. transformer.

Results, however, were beyond expectations, but considerable annoyance was experienced due to the coil being mounted in a shielded compartment already occupied by two valves and the resulting temperature changes as these valves warmed up made necessary a continual re-tuning of the "QX" to the original 1550 Kc.

However, the vast improvement in selectivity of the receiver decided me to re-build the unit along sound lines and incorporate it with the second i.f. channel of 450 Kc., as an integral part of the receiver. Consequently, the first of two 450 Kc. i.f. stages already in the receiver was removed, together with its "back-to-back" transformers. The sec-

ond stage was left in circuit to provide the usual source of a.v.c. voltage from the plate of the last i.f. amplifier, the new circuit not lending itself to this application.

As shown in Fig. 2A, the first 450 Kc. i.f. transformer was also left in the circuit mainly for convenience in coupling the mixer valve to the Q multiplier although tests proved that this transformer may also be removed, substituting an r.f. choke for the primary winding and taking the input to the "QX" from the plate of the mixer through the resistor-condenser combination as shown in Fig. 2B.

No difference in performance is noted with either method of input coupling providing that the input impedance, or I should say, the source impedance is kept as high as possible. The series resistor helps in this regard and also serves to reduce the signal input, to the benefit of the following "QX" circuit.

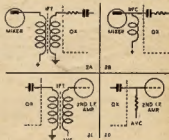


FIG. 2 ALTERNATIVE INPUT & OUTPUT CIRCUITS

The preparation of the tuned circuit LC requires some explanation. The coil L is, as previously explained, one winding from an i.f. transformer. The type of transformer is not important. I have used with equal success, an R.C.S. 450 Kc. winding and a disposals type taken from a No. 11 set.

Remove the shield can and carefully disconnect the two wires leading from the top winding to the soldering lugs at the base. Then, with a hacksaw, cut through the coil former, first making sure that the iron slugs are not in the way. Either of the two windings may be used, whichever is the easiest to mount. It will be noticed that each winding has a condenser already wired in. The first must be removed and its capacity noted. The usual value found in R.C.S. or Crown units is about 50 pF, whereas the No. 11 type has condensers of 115 pF.

It will be necessary to provide this total capacity across the finished coil if we are to tune to the original frequency. Referring to Fig. 1 again, it will be seen that this total C is made up by three separate condensers combining to give an approximately equal amount each side of the feedback connection. In the case of the 50 pF. total, these three are as follows: C1 100 pF., C2 75 pF. and C3 a 50 pF. variable set at half capacity. The purpose of this variable condenser will be explained later.

It will be seen that the total capacity across the coil is now back to the original 50 pF. A similar arrangement must be made with any type of i.f. winding making sure that the series combination of C equals the original value.

(Continued on Page 7)

TELEVISION MADE EASY

Part vii.—The Carrier Difference System

BY KEN WALL† AND JOHN JARMAN,* VK3ADA

So a television set consists of two receivers on the one chassis, one for the picture or "vision" signals, and the other for the sound. How much cheaper it would be if a single receiver could handle both signals!

Believe it or not, such a receiver can be designed. It is the "carrier difference" receiver, whose operating principle depends upon the use of different modulation methods for the vision and sound signals.

Now we have learnt that the Australian television system will use amplitude modulation (a.m.) for the picture signal and frequency modulation (f.m.) for the sound, so that this type of receiver will be quite practicable in this country. Before we can learn how it works however, we must understand the "outlines" of frequency modulation and how it differs from the conventional system which we call amplitude modulation.

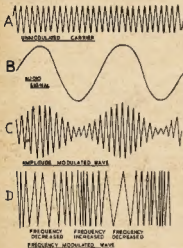


Fig. 1.

Now take a look at Fig. 1, where A represents the waves emitted by any transmitter when it is on the air, but no sound is being sent out (e.g. during an instant when nobody is speaking). This is called an unmodulated carrier. Suppose now that the announcer speaks into the microphone. Fig. 1B represents two cycles of the audio voltage which his voice will produce.

Fig. 1C shows the same waves as A after being amplitude modulated by the audio signal (B). Note that the waves are evenly spaced, but the height or amplitude varies. This method of modulation is used by all broadcast stations and by most Hams.

Now note Fig. 1D. This shows the same waves (A) but this time frequency modulated by the signal (B). The amplitude now remains fixed, but the spaces between the waves vary. In other words, the frequency changes. Frequency modulation, therefore, simply means varying the frequency instead of the amplitude, as is done in the conventional system.

Now for a little more detail. Compare C and D of Fig. 1. Note that in f.m., the crest of each sound wave is conveyed by decreasing the frequency of the radio waves and the trough of the same sound wave by increasing the frequency. The louder the sound, the greater will be these increases and decreases in carrier frequency. The number of times per second that they take place is the audio frequency, or "pitch," of the note being transmitted. Still clear as mud?

Then let us take a numerical example. Suppose a carrier of 1,000 Kc. be frequency modulated by middle C, whose pitch is 256 cycles per second. Suppose also that the note be loud enough to make the frequency change by 10 Kc. Our carrier frequency, instead of remaining steady, will now alternately rise to 1,010 Kc. and fall to 990 Kc., repeating the process 256 times per second.

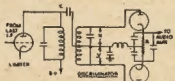


Fig. 2.

Best we now introduce two common technical terms. The amount by which our frequency increases or decreases in each half cycle is called the "deviation" (in this case 10 Kc.), and the total change in frequency in each cycle is called the "swing" (in this case 20 Kc.).

Suppose now that the same note be played softly, so that the deviation is only 5 Kc. Our carrier frequency will now swing between 995 and 1,005 Kc., 256 times per second.

We see therefore, that the louder the sound, the greater will be the deviation, and it is interesting to note that we cannot over-modulate the carrier, as in a.m.

Increasing the deviation, however, produces extra sidebands, thereby increasing the band-width of the signal, so deviation must be restricted, and the Australian Broadcasting Control Board has limited the maximum deviation to 25 Kc. In other words, transmitters must be adjusted so that the loudest sound will not cause the frequency to increase, or decrease, by more than 25 Kc.

An f.m. receiver is a superheterodyne type, differing from the a.m. set mainly in that the detector is replaced by a device whose output is proportional to changes in frequency, instead of changes in amplitude. Two of these devices are shown in Figs. 2 and 3, and we will outline their operation very briefly.

Each uses a modified i.f. transformer in whose secondary winding, two alternating voltages are produced. One of these is induced electromagnetically in the normal way, and the other is fed to the centre tap, in this case through a capacitor C.

Both windings are tuned to the centre value of the i.f. and, if we review our theory of the tuned circuit, we will find that the phase of the magnetically induced voltage must change as the i.f. swings between its highest and lowest values.

Remember, at resonant frequency, a tuned circuit (such as the secondary winding, in Figs. 2 and 3) is purely resistive, but when the frequency changes it becomes either a capacitive or an inductive reactor, depending whether the frequency varies above or below resonance. Our magnetically-induced voltage will therefore "lag" or "lead" the centre tap voltage, and by combining with the latter, it produces a surprising effect.

Consider the voltages x and y (Figs. 2 and 3) across the two halves of the secondary. At resonant frequency, they are equal and opposite. When the i.f. increases above resonance, however, y becomes greater than x so that the output voltage (across R) decreases, producing a "trough" of audio voltage. When the i.f. decreases below resonance, x becomes greater than y so that the output voltage across R increases, producing a "crest" of audio voltage.

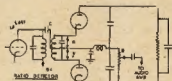


Fig. 3.

The device therefore turns frequency changes into audio voltage, which is just what we require. There is an important difference, however, between Figs. 2 and 3.

In the discriminator (Fig. 2), the output is proportional to the difference between x and y, whereas in the ratio detector (Fig. 3), it is proportional to their ratio. This means that the discriminator will respond to either f.m. or a.m. signals, whereas the ratio detector responds to f.m. only. For this reason, the discriminator, when used, must be preceded by at least one limiter. This is simply an amplifier, operated in over-loaded condition so that it "flattens out" any changes in signal amplitude, thereby making the receiver immune to a.m.

It is by "turning the deaf ear" to a.m. that the f.m. receiver achieves its main advantages over the conventional set.

† 172 Johnson Street, Maffra, Victoria.
* A1426 L.A.C. Jarman, J. B., c/o A.R.D.U., R.A.A.F., Woomera S., South Australia.

the most important being elimination of interference. All known forms of interference, including valve hiss and static, cause only amplitude modulation, so that if our receiver responds only to f.m., we will have noise-free reception.

Now, readers who have experimented with f.m. will have their own opinions about this, but we shall not argue, since we are concerned with an entirely different aspect of f.m.

We have "harped" on this subject for a long time, but readers not already familiar with f.m. will agree that it has been quite relevant. The main point we have been trying to drive home is that an a.m. detector (if broadly tuned) will not respond to f.m. signals, and likewise, an f.m. "demodulator" (Fig. 2 or 3) will not respond to a.m., and if this is clear, we are now ready to deal with the carrier-difference receiver.

Consider two signals, on adjacent frequencies: one a.m., the other f.m. By means of a broadly tuned receiver, the two signals can be picked up and handled by all pre-detection stages, and separated after detection. This is the operating principle of our carrier-difference receiver, illustrated in Fig. 4, in which the a.m. signal carries the picture detail, and the f.m. signal, on a frequency 6 Mc. higher, carries the sound.

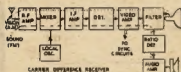


Fig. 4.

Yes, we have combined two receivers into one, to produce a cheaper television set, but why call it a "carrier-difference" receiver? Here's the secret. Whenever two signals, of different frequency, are mixed in a detector a new frequency equal to their difference is produced. We are already familiar with one example of this, in the mixer, or converter stage of a superheterodyne receiver. In our c.d. receiver the same action takes place in the detector, between the sound and vision i.f. signals, whose difference will be 6 Mc.

The detector's output, therefore, contains, in addition to the normal detected video signal, a new 6 Mc. signal. Since this is frequency modulated, its value will actually swing between 5.975 and 6.025 Mc. By means of a filter, we can separate this from the video signal (which goes to the cathode ray tube), and by a suitable demodulator (in this case, a ratio detector) we can produce our audio voltage as already explained and convert it into sound by the normal methods.

We see therefore that our audio signal is obtained from the difference between the two r.f. carriers; hence the name "carrier difference" or "inter-carrier modulation" system, and it should be noted that even after detection, the sound and picture signals can be amplified together, without interfering.

The advantage of this system? Mainly the prevention of fading of sound when the local oscillator drifts. The difference between the two carriers is fixed at the transmitter, so that no matter how much our local oscillator frequency varies, the 6 Mc. signal applied to our filter and sound circuit will remain unchanged.

But why not build a stable local oscillator? We do, or at least as stable as present-day techniques permit, but remember we are handling carrier frequencies between 180 and 204 Mc., so that our l.o. must operate at such a high frequency that even the smallest practicable percentage of drift must appreciably change the i.f.

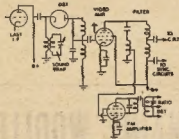


Fig. 5.

Now in the conventional television set we have separate i.f. channels for vision and sound and although each channel is tuned as broadly as practicable, the band-pass of each is limited by the danger of the two i.f.s. signals interfering with each other, so that a very little change in either i.f. can weaken the output appreciably.

The advantages of the c.d. receiver, where both i.f.s. can be handled by the same circuit without interfering, should now be quite apparent. The common i.f. circuit can be tuned broadly enough to accommodate the anticipated drifts in frequency, thereby preventing fading of the picture, and we have already seen how fading of the sound is prevented.

Did somebody mention a crystal-controlled local oscillator? Yes, this would work, but it is hardly a commercial practicability, since it would necessitate frequency-multiplying stages, thereby increasing the cost of the receiver.

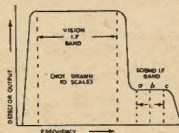


Fig. 6.

A typical circuit arrangement is shown in Fig. 5, which should be studied in conjunction with Fig. 8, which represents the detector output (not the i.f. band-pass, remember).

As an extra precaution against the sound signal interfering with the picture, a sound trap is provided which weakens the sound i.f. before detection, as shown by the "shelf" a-b-c in Fig. 6. This is compensated by passing the 6 Mc. signal, after extraction by the filter, through the f.m. amplifier, which is operated in such condition as to have a slight limiting action since, although a ratio detector does not respond to amplitude modulation, experience has proved that it gives better results when preceded by a limiter.

Note also that if the circuit is adjusted so that the shelf a-b-c in Fig. 6 is perfectly flat, the swinging of the frequency of the sound i.f. (i.e. its frequency modulation) will not cause any change in the detector's output. In other words, our detector is tuned to respond only to amplitude modulation so that the f.m. sound signal cannot interfere with the picture.

To end this "chin-way," we will mention a rather interesting draw-back of the c.d. system. We have already learnt that with negative modulation, the brighter the picture element, the smaller will be the carrier amplitude. Now suppose a scene contained an object so bright that it reduced the carrier amplitude to zero, in other words, cut the carrier (Fig. 7).

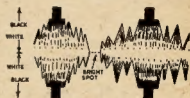


Fig. 7.

Since our sound filter is tuned to the difference between the two carriers, our sound signal is dependent upon the vision carrier, so that cutting the latter must also cut off the sound. Therefore, each time the bright spot is scanned, there will be a short pause of silence, so that our sound will be interrupted at field frequency (50 cycles per second), so that a 50 cycle hum would accompany the sound from the speaker.

The Australian Broadcasting Control Board, however, has taken care of this possibility by limiting the minimum carrier amplitude to 10% of its maximum value, so that transmitters must be adjusted to ensure that the brightest objects televised will not reduce the carrier amplitude below this value.

Having now covered the principles of television, we should be prepared to deal with the subject of interference which, of course, is the Ham's chief concern. This will be the subject of our next instalment.

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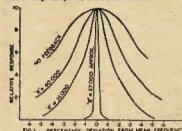
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THE "QX"

(Continued from Page 3)

No restrictions are placed on the actual construction of the unit, but it will be found necessary to shield the coil L if it is in close proximity to other 450 Kc. tuned circuits, otherwise interaction is bound to occur. In my own case the new unit is well removed from other i.f. circuits, the input and output being taken through co-ax leads. This was done to allow the unit to be mounted at the front of the receiver for ease in manipulation of the control knobs on C3 and the feedback potentiometer. However, the mechanical arrangements may well be left to the individual constructor.

Now for the purpose of the variable condenser C3. For purely phone work, this condenser could quite well be eliminated, its place being taken by a fixed capacity of suitable value.



In c.w. reception however, the situation is altered. Normally in receiving c.w. signals, three methods are commonly used, being (a) tuning the receiver to zero beat with the required station and then varying the b.f.o. tuning until the required beat note is heard; (b) Setting the b.f.o. frequency to a value of from 500 to 1,000 cycles higher or lower than the mean i.f. frequency, thereby providing a strong beat note on one side only of the zero setting, the so-called "single signal" method; and (c) Setting the b.f.o. at exactly the i.f. frequency and receiving a beat note of equal strength on each side of zero.

Each of these methods has its drawbacks. In (a) the tedious necessity of jiggling the b.f.o. tuning for each station required; (b) being limited to a beat note on one side of zero only, leaves

no alternative when an interfering signal appears. Personally, I prefer method (c), but the undesirable feature of this method is that the signal, or beat note is received on the side, or skirt of the i.f. selectivity curve, definitely not the receiver's most sensitive position.

Now with the "QX" circuit, the variable C3 permits the variation of the mean i.f. frequency to plus or minus 1 Kc. or more. The procedure is this. Tune in the signal in the usual manner choosing the side of zero beat where QRM is at a minimum as is the usual custom. If the QRM is light and the required signal strong enough it is unnecessary to make any further adjustments, but if the required signal is weak or the QRM solid, as is often the case on our crowded bands, then C3 is moved slightly, peaking the i.f. channel on exactly the frequency produced by the required station. Presto! The wanted signal immediately stands out like a shag on a rock while the interfering station is relegated to the background where it belongs.

For phone reception, the C3 control is left in the centre or mean position. It will be found though, that with the feedback control set at the critical value for maximum feedback, a value of from 25,000 to 30,000 ohms, the selectivity is so high that phone stations appear to be well undermodulated and with a preponderance of bass due to the severe cutting or attenuation of the high frequency sidebands. This cannot be avoid-

ed in any highly selective circuit and it may be necessary to "back off" the feedback control somewhat if audio fidelity is required. This is left to the operator and it is an easy matter to turn a knob, the only operation necessary to change from sharp to broad tuning.

Fig. 3 shows comparative selectivity curves obtained for various settings of the feedback control R. These must not be taken as extremely accurate because of the lack of laboratory instruments, but merely serve to give a good indication of the results which may be obtained with the unit described.

Although the "QX" has been used with equal success at 1550 Kc. and 450 Kc., these frequencies are by no means the only ones on which it may be used, and there is every reason to believe that it could operate successfully at frequencies ranging from the low i.f.s. of 50 Kc. or 100 Kc., right through to the high frequencies if care is taken to avoid phase shift. I intend, at some time in the near future to conduct experiments with it in the range 10 to 30 Mc., where conventional h.f. amplifiers are notoriously lacking in selectivity.

The "QX" should be a distinct advantage to those Amateurs using simple superhet receivers, giving as it does a selectivity comparable to that of a much more elaborate receiver using a crystal filter, with much greater ease of control.

I would be glad to hear from any of you who try this circuit, particularly if experimenting in the h.f. ranges.

A Simple 12 Watt 144 Mc. Transmitter

BY A. H. MORRISBY,* VK7MY

The transmitter described will be used later to drive an 832, which in turn will drive a pair of VT90s (micropups).

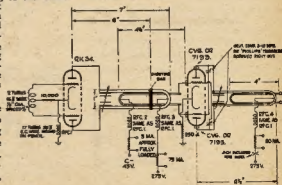
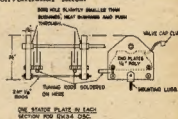
The general construction and layout of the 144 Mc. transmitter circuit is as follows: The chassis size is 22 inches by 7 inches by 4 inches deep, with the RK34 valve recessed through the chassis so that the plate caps are the same height as the CV6 caps. The grid coil is mounted under the chassis on a polystyrene strip. All pillars and insulation throughout are of polystyrene.

The split stator tuning condensers are made up from standard midgets, by replacing the ends with larger pieces of polystyrene and mounting to the stator plates double spaced at each end, making them part of the plate tank rod as shown in the diagram.

All tuning rods are made of 1/8" copper tubing and coupling can be adjusted by bending the grid rods and antenna rod respectively.

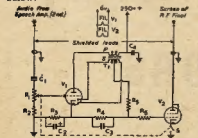
The oscillator stage must be constructed so that all parts and wiring are firm and cannot be jarred out of adjustment.

The remaining details of the transmitter are self explanatory if the diagrams are studied, and the tuning and setting up of the transmitter follow conventional lines.



ERRATUM

We apologise for an error in the Clamp Tube Modulation diagram on page 10 of the February issue. The diode obviously should not be connected to the plate, otherwise high positive voltage would be applied to the grid of V2. The corrected diagram is shown below.



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Antenna System for General Amateur Use

The following is a description of an antenna system devised by the writer in an attempt to fulfill the following requirements:—

- To be suitable for at least three of the harmonically related Amateur bands.
- To be self-resonant only on the band in use so as to minimise the radiation of harmonics.
- To be fed with a flat line (a small s.w.r. was of no objection).
- The system to be balanced in order to keep the feeder currents equal so as to prevent losses in and radiation from the feeders.
- To be as simple and easy to construct as possible

It will be realised that to satisfy all the above requirements at the same time is almost impossible. However the final arrangement arrived at, which has been erected and tested and which does go a long way towards the ideal, is as follows:—

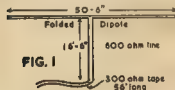


Fig. 1 shows the dimensions and construction of the antenna. Due to there being a difference of potential between the two antenna wires on 14 Mc. and a slightly lower p.d. on 7 Mc., it is advisable to separate these two wires with small separators about 2" long. The antenna and matching section can be made of ordinary 14 gauge antenna wire. The feed line should consist of 300 ohm tape. The bottom end of the matching section should be held in position by means of a stay wire secured to a short pole or some other fixed object in order not to place any strain on the 300 ohm tape feed line.



Fig. 2 shows the current distribution when used on 28 Mc. The system is a one and a half wave lengths folded dipole with a half wave length linear transformer between the centre of the antenna and the feed line. The radiation pattern consists of four major lobes fairly evenly distributed with minimums off the ends and centre of the antenna. The feed point impedance is approximately 350 ohms.

Fig. 3 shows the current distribution when used on 14 Mc. The system is a three-quarter wave length folded dipole with a quarter wave length matching



section between the antenna and the feed line. The radiation pattern is similar to that of an extended double Zepp and is in the form of a narrow figure 8 at right angles to the antenna. The feed point impedance is approximately 150 ohms.

Fig. 4 shows the current distribution when used on 7 Mc. The system is a half wave length folded dipole with the currents in the bottom one-eighth section out of phase. The radiation pattern is similar to an ordinary half wave dipole. The feed point impedance is approximately 200 ohms.



When used on 3.5 Mc. feeder ends are tied together at the transmitter and the whole system is used as a "T" top Marconi antenna against ground. The feeders should be well insulated throughout their length, which should be such that a current loop or maximum is obtained at the transmitter. The earth wire should be as short and direct as possible and should not be the normal earth wire used for earthing the other equipment in the shack.

If the dimensions are doubled the antenna can be used on 3.5 Mc., 7 Mc., and 14 Mc. as a self-resonant antenna.

The feed point impedances quoted were arrived at experimentally and are therefore very approximate. Due to the slight mismatch between the antenna and the feed line there are standing waves on the feed line but they are not serious.

No difficulty will be experienced in loading the antenna if the feed line is made of multiple or half wave lengths long (56 feet is the shortest length for 7 Mc.). However any length of feed line can be used if provision is made to tune out the reactive component at the transmitter. In most cases a 150 pF. receiving type variable condenser connected either in parallel or series with the link will be sufficient.

The writer trusts that this antenna will prove of interest and use to other Amateurs and that those who are experimentally inclined will try it out and perhaps suggest some improvements.—ZSIDH. (Reprint from "Radio 25," May, 1951.

"ZONE 29 AWARD" ANNOUNCED

A new award for working VK8 stations has been announced by the Western Australian Division of the Institute. The "Zone 29 Award" came into force at 0001 hours W.A. time, 1st January, 1952, and rules are given below.

This new certificate should stimulate interest in working VK6 stations on the various bands and it is hoped that the VK6 Council will be kept busy endorsing and sending out these awards!

RULES

1. The "Zone 29 Award" is issued by the Western Australian Division of the Wireless Institute of Australia to licensed Amateurs throughout the world who satisfy the following requirements:

(a) Establishment of two-way communication with any 25 different Amateur Stations situated in Zone 29. Communication to be after 0001 W.A. time, 1st January, 1952

(b) The total of 25 different stations may be obtained by operation on one or more of the Amateur bands.

(c) Any types of emission which are permitted by the local licensing authority may be used.

2. The certificate will be endorsed when issued as confirmation of fulfilment of the following special conditions:

(a) All 25 stations obtained from operation on one band only.

(b) All 25 stations obtained from operation of phone transmission.

(c) All 25 stations obtained by one-band operation and phone only.

3. Confirmation, in writing, of all contacts must be submitted to the Western Australian Division of the Wireless Institute of Australia, Box N1002, G.P.O., Perth, with sufficient postage to cover cost of return of cards to owner.

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Where Amateurs are conducting emergency communications, the following emergency signals will be used and adopted as a standard in VK—

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A few vacancies exist in the present class for students desirous of obtaining the A.O.C.P. Persons so interested should communicate with the Secretary, W.I.A. Victorian Division, 191 Queen St., Melbourne (Phone FJ 6997 from 10 a.m. to 4 p.m.), or the Class Manager on Monday and Thursday evenings between 8 and 10 p.m.

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Ham Radio addict and he drove her wild by sitting for hours at the mike while the lawn sprouted paspalum and dandelions. 'You think you will get Hollywood this morning? Well you won't. I've taken out a valve from the set, and I won't tell you where it is until the grass is cut.' What are your thoughts? Cheers and keep the lawns cut, blokes.

The bright spot here has been 7 Mc., especially when the cyclone was raging. As the cyclone was at its peak, this band was very good in the mornings, but when the cyclone eased down, so did the DX on 7 Mc. Evenings on the band were of not much use. The break in this band enabled me to bring the worked total to 65. Other than 9XK and 2DG, no others were heard in there.

Static has been troublesome at times as far down as 14 Mc., and seemed to be general on 7 Mc. with all DX worked. ZD4AB told a ZS he could hear practically nothing through it, which was unfortunate from my point of view. The catch of the month for me was VUSAB in the Nicobar Islands. He was VS1ED, and as my QSL was posted in Singapore, he has now

* Flt./Lt. F. T. Hine, No. 10 (G.R.) Squadron,
R.A.A.F., Townsville, Queensland.

The band survey, with times in GMT, Z time, and stations worked as *.

3.5 Mc.: Have no reports from anybody on this band. TRK has been inactive for most of the month, so has nothing to report. Managed to get across to W myself a couple of times, heard a few others and KH8, but static was the problem most of the time and it was hard to read anything. ZLs varied in strength from night to night.

1 Me.: Other than my own activities there
is little to tell of for this band. Evenings were
of little value, and at all times the band was
erratic, but as mentioned this band paid off
up here. My listings are VUABD, KXK, FADG,
CRSAE, SULWF, CNSTP, SUIGO, MPBAM,
4UAK, CRSAF, ZDAAB, ISIAHK. In addition
to numerous South Africans, Europeans and a
few YV. AJH has not been doing much on the
air and working hard on his ship. When the
his XYL arrive, he intends to try the band a
bit harder. KXK was heard having a struggle
with CRSAE one morning, but Russ does not
seem to have heard the same DX as I managed.
I could not hear him, but it would be
not hear when the band went off here.

14 Me.: CX, who will be QRT for some time due to change of QTR to Grafston, nabbed ZSIBU, ZSDIN, ZSEKX, ZSLBZ, ZSTWV, total to \$20 worked. Art is still chasing ZA9AC and ZSNIC. TDG improved his score with ZSIAB, ZSKYD, ZSRUN, ZSGAT, ZSHIS, ZSUGL (Bulgaria, QSL via #84AX). Congrats to Keith on winning the Open Section of the VK-ZLE contest. He has been doing very well lately, much to his liking; but just the same I wish SUJAD, SULPA, SUIBG, VQOCL, APNLA, XHOM, YCMTM, YFOTI, ZRPM, ZTDM, HSAIS, FNHAD, KGAPL, FEEEX, ARUS, ZSIDM, MPKAK*, MPPBD*. ZBIJA? ZSBAN, ZSCAM, ZSDIN, ZSFAL, ZSPER, African. BCE has been trying to hook VF3YN, PZIIL and VNIAA with negative results, but he's got him now! ZPDR, ZPRK, ZPSCH, ZPTIM, him a score of 168. QLJL: VQCVC*, FRZA*, PMTWV* 518cc, CNRR, EZGRV, MPKAK* (repeated), PRTO, PSKUR, ROK, ZRO, ZOAGB, 4UD, 4UA?, ZDSIN, JAOL, LAIBE, TRK as mentioned earlier, has become quite good at working DX stations so far that he has found his rig, is going to produce some activity BKE has sneaked up to 100% and "hasn't" changed anything.

EKIAQ, EKIKW, ETJR, CTJAR, FKADA, FIACC, PQIV, VGTH, MISLK, RKD heard

18 Mr.: This band seems to be useless. 4EL reckons it's hardly worth while listening there.

The QSL situation is causing heartburnings as usual, some VKs getting one, whilst others miss out, from the same rare DX station. 2ACX reaches 205 confirmed with 283K, 2A2AC, FY7YE, 2A2AD, 854AR, TDG: EA0AB, 20W: CT3AA, 984AX, FK58AL, ZB3I, DU1EC, giving him now 58 dfc. DU1EC looks like the boy to watch for that hard to get DU QSL. 4QL: ZD1SD, 25A: FT3ZA, 984K: 98K: FT3ZA. The QSLBC TV vine leads me SPL has reached the nice total of 204/187.

It would appear that a few of the gang are counting the 4UA prefix as a new country. It will be found this is not a country but a prefix allotted to the United Nations, and therefore likely to appear in a number of countries. For example, 4UAD is in New Delhi, 4UAF Jaipur and 4UAK in Rawal Pindi. Kashmir is not at the present time a separate country. Just received a QSL from 4UAK and the information on the card is, United Nations Military Observation Group, India and Pakistan, Field Observation Team, Kohli, Pakistan.

Don't put up JASJ as just another JAS station. He is in two Jims. The reason JAS is the JAS is not known to date. EQFM looks like one of those guys who promises a QSL, but after waiting over a year they are still not being seen. CTAA is one of those who has been promising a QSL for over a year. ZD1SD said he is having great difficulty in convincing the other ZD1 Hams he has really worked VK, as, he said, VK is an unheard prefix over there. Is anxiously waiting my QSL to convince "Doubting Thomas." Don't make up with another MFA like 4RL did. His QTR is Kuwait.

● The thought for the month is an extract from a Woman's Magazine which the XYL put in my lap one day. "Her husband was a

Figure 1 consists of eight line graphs arranged in a 4x2 grid. Each graph plots monthly precipitation (mm) on the y-axis (0 to 40) against time on the x-axis (0 to 30 days). The graphs are labeled as follows:

- Top row: C-21SR, C-25
- Second row: C-21LR, C-26
- Third row: C-22, P-21
- Fourth row: C-23, P-23
- Fifth row: C-23A-SR, P-23A
- Sixth row: C-23A-LR, P-25
- Seventh row: C-24, P-26

Each graph shows a different pattern of precipitation, with some peaks and troughs labeled 'M.F.' and 'S.F.'.

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Call	No.	Ctr.	Call	No.	Ctr.
VK3EE	10	183	VK4WF	18	121
VK3ED	11	183	VK4WV	18	121
VK3BD	3	184	VK3AWW	14	112
VK4HR	12	154	VK4DO	20	100
VK8RU	2	140	VK4FJ	21	100
VK8RW	4	140	VK2AZ	13	103
VK4RS	9	135	VK2AHA	10	103
VK3LN	11	132	VK8RQ	19	101
VK6DO	4	135	VK3IG	8	100
VK3E	7	123	VK3GQ	18	100
VK4WJ	17	127			

Call	No. Ctr.	Call	No. Ctr.
VK3BZ	8 300	VK3JE	21 134
VK3FH	15 173	VK3VD	27 133
VK3G	8 160	VK3KX	27 132
VK4EL	9 163	VK3FN	31 119
VK3EO	2 181	VK3J1	35 118
VK3CN	1 183	VK3GM	12 116
VK3GA	8 188	VK4DA	24 115
VK3VW	5 143	VK3PL	26 113
VK3QL	5 146	VK7LE	17 113
VK3NB	10 133	VK4RZ	18 107
VK3BU	10 132	VK3YK	34 106
VK3GW	16 132	VK3YC	34 103
VK3RS	23 132	VK3HT	37 103
VK3CX	26 132	VK3APA	16 101
VK3DO	26 132	VK3NC	19 101
VK3FJ	23 129	VK3QA	33 101
VK3BO	33 129	VK7RK	33 100
VK3DS	30 128	VK7LJ	34 100
VK3GL	30 128	VK3AEZ	35 100
VK3HF	11 125		

Call	No. Ctr.	Call	No. Ctr.
VK3BZ	4 213	VK3VQ	46 218
VK3CJ	3 214	VK3VA	46 219
VK3RU	8 183	VK3JA	43 114
VK3JE	12 180	VK3ADT	14 111
VK3HG	3 17	VK3B	47 117
VK3DI	1 170	VK3AM	49 111
VK3KK	1 171	VK3RC	49 110
VK3KW	13 185	VK3ZE	34 110
VK3AL	13 186	VK3V	46 118
VK3DO	15 127	VK3TL	11 106
VK3AF	32 125	VK3AWN	26 105
VK3G	32 126	VK3VW	46 119
VK3FL	36 143	VK3UL	37 104
VK3MC	0 130	VK3PJ	44 104
VK3CP	16 130	VK3VH	46 116
VK3DD	22 138	VK3HZ	17 103
VK3LN	20 133	VK3KB	30 123
VK3AR	20 134	VK3VJ	46 115
VK3JAH	9 128	VK3FO	38 123
VK3WF	40 124	VK3DX	42 125
VK3AM	40 125	VK3TK	37 123
VK3NS	16 123	VK3TY	25 122
VK3HT	41 123	VK3GO	48 102
VK3LI	33 119	VK3AC	4 100
VK3Z	1 120		

AMATEUR CALL SIGNS

FOR MONTHS OF DECEMBER, 1961, AND
JANUARY, 1962

ADDITIONS

NEW South Wales

- 2FN-F. G. Noble, 43 James St., Lismore.
2ACK-C. Jeffery, 33 Seymour St., Hurkville.
2AMY-A. R. Morgan
2ARO-R. C. Carlton, 63 Mowbray Rd., Wolloughby.
2ASY-S. A. Sibby, 5 Collins Ave., Rose Bay.

Victoria

- 3IJ-D. R. Twigg, Bank St., Avenel.
3IJ-R. W. Field, 568 North Rd., Ormond, S.E.14
3INP-M. J. Marshall, 23 Clivedale Ave., Toorak, S.E.2
3OL-F. C. Bibby, 10 Westbourne Gr., Camberwell, E.8
3SX-L. R. Bradshaw, 9 Grange Rd., Toorak, S.E.3
3VU-J. C. Chippindall, 29 Waverley Pde., Pausanias, V.8
3AMG-C. W. Meech, 23 Clendon Rd., Armadale
3ANR-N. Cooper, 13 Moor St., Sandringham, S.8
3ANU-R. Coffin, aboard vessel "Carole G"
Postal address: 10 Dillon Gr., Glen Iris.

Queensland

- 4NT-R. C. Morris, 30 Kent St., Rockhampton.
4NV-L. E. Neavenon, "Hollandia", Lamrock St., Holland Park, Brisbane.
4VD-V. E. Bell, 35 Jones St., Wandal, Rockhampton.
4ZO-J. Hillhouse, Carpent St., Collingville.

South Australia

- 5TC-J. E. McAllister, 126a Chief St., Brompton.
5QY-C. W. Richardson, R.A.A.F. Station, Darwin, N.T.

Western Australia

- 6LC-E. L. L. Cordell, Flying Doctor Service, Kilarney St., Kalgoorlie.

Tasmania

- 7CH-C. Harrison, A.N.Z. Bank Ltd., Moonah.
7TF-F. D. Frith, 69 Lyttelton St., Launceston.
7RC-R. C. Ireson, c/o D.C.A. Aerodrome, Western Junction.

DELETIONS

NEW South Wales

- 3CZ-128 Wangee Road, Lakemba.
2FA-30 Strathlough, Strathfield.
2TK-"Omure", Blaxland Road, Wentworth Falls.
2LB-303 Cabramatta Road, Cabramatta.
2LA-10 Lucinda Avenue, Wuhroonga.
2OG-140 Hood Street, Grafton.
2QU-51 Melburn Street, Lithgow.
2SV-248 Buffalo Road, Ryde.
2VY-45 Herbert Street, Rockdale.
2XB-31 Westbourne Road, Roseville.
2TY-3 Tenilba Road, Northbridge.
2AAE-Lot 9, Chisholm Street, Turramurra.
2ACM-33 Botony Street, Randwick, N.S.W.
2AFV-Vessel "Syngine", Campbell's Beachhead, Rose Bay.
2ATS-N.A.A.F. Station, Willamtown.
2AOM-Flat 26, 43 Macleay St., Potts Point.
2ABD-30 Campbell St., Ainslie, Canberra.
2AZO-36 St. George's Crescent, Drummoyle.

WESTERN

- 3AC-186 Moreland Road, West Brunswick.
3BF-Lot 16, Quinns Road, East Bentleigh.
3DO-3 Wadham Street, Pascoe Vale South, W.7
3DZ-297 Pt. Nepean Road, Gardenvale, S.4
3EF-205 Kent Street, Warrackbeal.
3GN-Cr. Speed St. & Toucher Ave., Ararat.
3IG-"Yanagin", 45 Bankside St., Heidelberg.
3JG-39 Bell Avenue, Wedonga.
3JU-Argent Road, Cornelia.
3QK-Churchill Island, Newhaven.
3RU-Lot 17, 30 Avenue, Nunawading.
3RV-Cr. Boulevard & Centre Aves., Eldon.
3VQ-480 Beach Road, Beaumaris, S.10.
3WJ-40 Ruby Street, East Preston, N.18.
3WY-11 Derry Street, Easenden West, W.5.
3ABN-C/o. Payneville P.O.
3AEP-8 Kerry Parade, Box Hill North, E.12.
3AO-18 Soloman Street, Shepparton.
3AKP-Fisher Street, Slawall.
3AMC-Hampton Villa, Princes St., Drysdale.
3ACP-46 Neil Street, West Geelong.
3ACB-17 Chloris Street, Caulfield Sth., S.E.4.
3ATN-Cumming Avenue, Birchip.
3AWU-37 Berry Street, Regens Park.
3AZK-7 Bent Street, Bentleigh.

Queensland

- 4BY-Fairview Hill, Gympie.
4BR-257 Rainbow Street, Shorncliffe, N.E.7.
4UT-Flat 74C, Victoria Park Housing Commission, Brisbane.

- 4QG-John Street, Yarraman.
4MD-33 Balldon Street, Kangaroo Point.
4DE-45 Adelaide Street, Maryborough.
4TD-Hope Street, Cooktown.
4WJ-C/o Power House, Quilpie.
4KJ-4 Catermill Street, West Bundaberg.
4SE-44 Prospect Street, Rockhampton.
4ZU-Hut B, Harrisston, T/A.

South Australia

- 5HH-Croydon Boys' Technical School, Croydon.
5DR-Kirton Point, Port Lincoln.
5BF-Cape Borda Lighthouse, Kangaroo Island.
5MH-29 Main Street, Lockleys.
5WX-9 Blairgowrie Avenue, St. Georges.
5KR-30 Pine Street, Peterborough.
5DQ-42 Adelaide Terrace, Ascot Park.

Western Australia

- 5DQ-151 Guildcliffe Street, Scarborough.
5KX-2 West Street, West Perth.
5RB-140 McDonald Street, Joondanna Heights.

Tasmania

- 7CA-56 Trevallyn Road, Launceston.

Victoria

- 8IH-Lawes Road, Port Moresby.

DELETIONS

New South Wales

- 2FU-Cancelled.
2HI-Cancelled.
2HX-Cancelled.
2HY-Cancelled.
2KJ-Cancelled.
2ON-Cancelled.
2PY-Cancelled, now operating 2PY.

Victoria

- 2XN-Cancelled, now operating 7CH.
2LR-Cancelled.
2QY-Cancelled, now operating 2QY.
2ABV-Cancelled, now operating 7PF.

Queensland

- 4BO-Cancelled.
4CT-Cancelled.
4DD-Cancelled.
4EN-Cancelled.

South Australia

- 5IM-Cancelled, now operating 5IMG.
5GR-Cancelled, now operating 5UN.
7GR-Cancelled.

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- * Type OT711-11 Low-level Output Transformer, radio-metal core, 20,000/600 ohms, match p.p. stage, F.F.R. 31/6
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- * Type IT557-6 Interstage Transformer, 20,000/80,000 ohms for single ended stage, V.F.R. 31/6
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- * Type IT577-10 Input Transformer, low-level, 500/100,000 ohms, mumetal core, for use with shunt fed primary, F.F.R. 49/6
- * Type IT586-6 Input Transformer, low-level, 600/150,000 ohms, mumetal core, for use with shunt fed primary, F.F.R. 49/6
- * Type LT310-10 Line Transformer, 50/600 ohms, balanced to unbalanced line, mumetal core, F.F.R. 49/6
- * Type Z362-1 Filter Choke, 12 henry, 300 Ma. 52/6
- * Type Z1613-1 Filter Choke, 7 henry, 250 Ma. 43/6
- * Type Z369-1 Filter Choke, 30 henry, 80 Ma. 37/6

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President: John Moyle, VK3UJ.
Secretary: David H. Duff (VK3KO), Box 1724 G.P.O., Sydney.
Meeting Night: Fourth Friday of each month at Science House, Corner Gloucester and Kent Sts., Sydney.

Zone Correspondents: North Coast and Tablelands: Noel Hanson, VK3AHL, Ryan Ave, West Kempsey, Newcastle; Ron McD. Stuart, VK3AKS, 18 Duror St., Block 1, Coalfields and Lakes: Harry Hawkins, VK3JL, 27 Comfort Ave., Cessnock, Western; W. H. Bitt, VK3WV, 10 Cambiways, Furber, South Coast and Southern: Roy Rayner VK3JDO, 42 Pitt St, Yass; Eastern Suburbs: Don Knox, VK3NO, 4 Yanko Ave., Waverley, Northern Suburbs: Harry Powell VK3AYV, Russell Ave., Wahroonga; B. George: Chas. Coyle, VK3YK, 84 Carlton Cres., Kogarah Bay.

VICTORIA

President: G. S. C. Semmens, VK3GS.
Secretary: L. R. Bradshaw, VK3KX.

Administrative Secretary: Mrs. S. May, Law Court Chambers, 191 Queen St., Melbourne.
Meeting Night: Third Wednesday of each month at the Radio School, Melb. Technical College.
Zone Correspondents: Western: C. G. Waring, VK3JL and Glen St., Stawell; South Western: K. O'Rourke, VK3AKJ, Killgrew, Western; North Eastern: T. K. Tennant, VK3JZ, 35 Wilson Ave., Tatura, Far North West: J. A. Ford, VK3KJ, 161 Lennon Ave., Mildura; Eastern: H. O. Kellas, VK3AHE, Timarab; North Western: C. Case, VK3ACE, Cumnagun Ave., Birchip.

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Secretary: J. F. Pickles, VK3FP, Box 68W, G.P.O., Brisbane.
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Divisional Sub-Editors: Clive J. Cooke, VK3AC, Kurau Street, Chermadale, Brisbane.

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President: E. A. Barber, VK3MD.
Secretary: G. M. Bowen, VK3XU, Box 1244K, G.P.O., Adelaide.

Meeting Night: Second Tuesday of each month, 17 Wymouth St., Adelaide.
Divisional Sub-Editors: Parsons, VK3PS, 10 Victoria Ave., Rose Park.

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President: J. Campbell-Watson, VK3WJ.
Secretary: H. B. Lang, Box N102, G.P.O., Perth.
Meeting Night: Perth Technical College Annex, Mounts Bay Road, Perth.
Meeting Night: Second Monday of each month, Divisional Sub-Editor: M. Atkinson, VK3WZ, Box 127, Geraldton, W.A.

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President: R. O'May, VK3OM.
Secretary: L. W. Edwards, VK3LE, Box 311B, G.P.O., Hobart.
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Divisional Sub-Editors: S. Krell, VK3JW, 77 Malle St., Hobart, Tasmania.
Zone Correspondents: Northern: C. A. Cullinan, VK3KW, 13 McIntyre St., Launceston; South Western: S. Wilson, Menal St., Burnie, Tasmania.

FEDERAL

COMMERCIAL INTERFERENCE IN THE 7 Mc. BAND

Many have been the requests by Amateurs for something to be done about the Commercial Interference gradually dominating the 7 Mc. band. This matter has been taken up with the Department on numerous occasions, but it appears that very little could be done about it.

It is doubtful whether many Amateurs are fully aware of the full story surrounding allocations in this band and the difficulties any administrative body have in taking steps to clear it for Amateur use.

The editorial in the December, 1951, issue of "QST" gives a rather interesting and comprehensive view of the general problem in this band and, whilst it concerns mainly the efforts in the northern hemisphere, it does also give a clear picture of the frequency allocation arising from the Cairo (1938) and Atlantic City (1947) Conventions whereby the 7000 to 7300 kc. (or, in Australia, the southern hemisphere) is a shared channel.

Australia, like America, preserved portions of the 7 Mc band exclusively for Amateur use, but it will be observed that the allocation at the discretion of the national administrations, so whilst we are granted 7 to 7.3 Mc exclusively as far as our administration is concerned, other administrations permit broadcasting down as low as 7.1 Mc. How can we win? Anyway, boys, you read December "QST".

DEFENCE

At 2.30 p.m. on Monday, 4th February, members of Federal Executive received a two-hour hearing at the offices of the Defence Services Committee to discuss proposals whereby Amateurs could be of assistance in any defence plans for times of national emergency.

The V.I. Committee was very interested with great interest and hopes are running high for future results from this meeting. The accent is on only one thing, that is, that any plan that ever an Amateur should take steps now to interest himself in constructing reliable portable equipment for use in the V.H.F. and L.F. bands. Don't be prepared for any plan that may evolve, if the Institute is successful in its negotiations it will be the greatest opportunity that has ever had to show what it can and will do.

TRAVELLERS ABROAD

Once again the opportunity has presented itself for Federal Executives to discuss the introduction to a member of the Institute travelling abroad. This time it is to J. L. (Len) Crook, VK3QJ, travelling in the company of members of the R.S.G.B. in England. Len also proposes to travel in Europe. We hope he has an enjoyable trip and a safe return to his native Australia.

Don't forget, any time you propose travelling outside of VK to contact V.E. through your Council obtain a letter of introduction to the society in the country in which it is proposed to travel. National contact is a very important thing and we more to contact the society in the country when done in person than by any other means.

SILENT KEY

It is with deep regret that we record the passing of:-

VK3VK—Mr. M. Bowen.

ADDITIONS TO DX C.C. LIST

The following countries are now eligible for the DX C.C. List:-
Guinea, Spanish ZAO
and Amsterdam ZBO
..... ZBO

Contacts with Newfoundland prior to 21/3/48 will be counted.

W.A.C. AMERICA

Requests have often been received as to how one goes about obtaining the W.A.C. (Worked All Continents) America Award. This award is presented by the I.A.R.U. to any Amateur who can give satisfactory evidence that he or she has contacted each of the six recognised continental areas of the world by two-way communication with other Amateur stations. The main continental areas are: North America, South America, Europe, Asia, Africa and Oceania.

By agreement with the I.A.R.U., the necessity for applicants to forward cards to America is obviated by the appointment of an Officer in the Institute to undertake the checking of the verification cards submitted in support of the claim for the award.

An applicant for this award submits his written application to the Sub-Committee on DX cards, to the Secretary of his Division. The Secretary then verifies that he is a financial member and is entitled to the award. The Federal QSL Manager, Ray Jones, VK3RJ, c/o Box 311W, G.P.O., Melbourne, C.I., who after checking the verifications submitted, forwards the application with supporting evidence to the Federal Secretary applies to the I.A.R.U. on behalf of the applicant and the certificate is forwarded out in due course.

A specially endorsed certificate is available to an applicant who makes all six contacts on please.

When applying please don't forget to give your name and address and return postage for your cards.

FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

The QTH of 4UJ4 is Ted Gull, United Nations Radio, Jannu, Kathmanu.

Results of the Third All-European DX Competition, 1950, have just come to hand. The Australian list follows:- CW, 0P4, 2Z0, 3XK, 2GW, 8RA, late 4HC, 3R2; Phone: no VK stations listed.

On 27th November, 1951, QSTK makes enquiries of Bill Agard, VK3WV, Writer states that after spending 12 months in Con-

try and making many friends, Bill left to go to Sweden, but the Coventry gang have heard no news of him since. They pass along their best wishes and would like to hear from him.

The Cuba Radio Club again send information on how to obtain the W.C.A. (Worked Cuba Award) and express surprise that they have not no VK stations to date. Prize requirement of the award is having worked stations in CMI, 1, 2, 3, 5, 6, 7 and 8 districts. Other arrangements can be ascertained from this Bureau.

ZSBW, who is handling the QSLs for ZSMI, operating on Marion Island, advises that ZSMI is on from 1840 to 1900 on 3.5 Mc. and 3.5 Mc. in each hour. He uses the following frequencies: 1st choice 14590, 2nd choice 14180. He is a frequency fanatic and is unfortunately he prefers phone. He will not answer calls on his own frequency. He will be on Sundays, 10th, 17th and 24th February, then miss one Sunday, 24th March, 31st Sunday, 18th and 23rd March, and so on.

Reviewed rules of the Worked All Europe Award, as passed from the I.A.R.U. to the Editor can find the space it is proposed to briefly list the requirements for all awards in the near future.

An interesting batch of cards sighted during January were from EQ37M, of Teheran, Iran. QSL address, however, is: Sgt. Frank Murphy, G. 8 Mil. Mission, A.P.O. 303, care P.M., New York, U.S.A.

A correspondent seeks information on VK3FOM who has been heard on 7 Mc. phone station. QSL is Kalamoon, Saudi Arabia, a "black" one.

ERS 195 (Treb) has broken the silence. Presiding in performing relief duties at Mbit at end of 1951 and subsequently enjoying annual holidays, Eric has been busy logging stations in the recent M.F.D. and logged 18 QSOs during the last 12 months. He is a fellow thrilled with recent receipt of card from FB2ZZ (1950-51 expedition to New Amsterdam Island). Also repeatedly heard in the air while on VK3VU. Must have caught him with his heart very wide open Treb. You are the only one I have heard of possessing such a "treasure".

NEW SOUTH WALES

NORTHERN SUBURBS

There has been little activity in this area since Xmas, though bush fires have caused some excitement in the Hornsby District. Ted AFE had a very narrow escape in Mt. Kuringgai when a bush fire completely surrounded his home which he was extremely lucky to save. Three Hama, among others, arrived to help with the fighting. Fortunately our station was in the fire within a hundred feet of his home; Dave was last heard of sitting on his beam pole (with a bucket of water). 2AA4 planning to build a new spot on 20.0 Mc. Dave on 20.0 Mc. 2A1S heard after DX on 20. 3A2N heard on the air again after about three months' spell. A postcard from the 2A1S, who had the gang on the lower frequencies, 2A1NF and others active on forty. Mac 20T, from Broken Hill, called on Dave 20T on 20.0 Mc. Dave on 20.0 Mc. 2A1S in Newcastle, where a 75 ft. tower will mark the spot. Dave 2E0 operated portable

on his car trip to Melbourne and back, having daily contacts with 2A9P during the trip. It is good to hear Dave once again on the air when his job as Divisional Secretary allows. News about the activity of Hams in any area would be appreciated by the Sub-Editor and also by the readers of "A.R.I." Box 1704, G.P.O., Melbourne, or 8 Russell Avenue, Wahroonga, NSW 2224.

WESTERN SUBURBS
There has been considerable activity on the various bands during the past few months by members residing within the limits of the Western Suburbs. 2ANP and 2MQ are doing very well on 5 mhz these days, near nightly sited with 2MS and no doubt will eventually break into the Forbes district in the near future. 2A9P went away for Xmas and finished up having an excellent Xmas dinner (one glass milk) in hospital, back on deck now fully recovered. 2QG now on 144 is being heard so well on this band Harry 2AHU is on the air again now, is to be congratulated, along with Joyce, on the new second op. Hear that young Keith is colour conscious already. 2AAB still looking for DX, has tested his list of countries up ready for DX C.C., and

must be getting pretty close. Heard Joyce 2AMJ putting the usual good signal out of late, she never seems to be satisfied with the Rx, but works them just the same. 2AMU talks a lot about beams, the local beam should put out the herbs in the right direction. 2A9L heard frequently with a good signal despite the skip. The Burwood Radio Club meets each Tuesday night at Greenwood House, Liverpool Road, Field. A good night assured to all who care to attend. 2AIR is building a real Tx for 144, gets out from the local area. 2A9L is on the air on holidays these days, but the local foot is being held quite well by 2A2T, 2XK, 2YV, 2QW, 2N7 and a few more of the local boys. 2A9A has a very Lib. signal on 14 Mc., another beam coming up in the near future. 2A9H quite active again despite the study, nice Branch at the New Dinner with trying, work and trying to work DX, but getting interested in 144. 2AGG in camp at Inglesbury these days and so soon after getting his ticket on 20. 2ATL on 20 on holidays but heard on 20 occasionally 2K5 still works DX the hard way in the morning. 2AMC has a beam which appears to be working out quite nicely. 2A9A on 20 on holidays but getting the Tx down there and was heard talking of getting on 10.

BROKEN HILL AREA
With Max 207's departure from Broken Hill it will in future, be my pleasant task to keep the Red Sprint in this part of the Broken Hill Zone. Max left on a caravanning-radio holiday via Mildura, Bendigo, Melbourne, Albury and Canberra before taking up his new post as Electrical Master at a Newcastle school. He has been heard all the way and contacted many Hams along the way, personally also. Another teacher, 2VR, has been heard on the "addition and subtraction" staff at Bathurst. Before leaving, he was putting the finishing touches to the car radio, converter and Tx for 40. 2DQ is renewing old acquaintances and making many new ones while in VKS. Dud is active on 50 Mc., but is having trouble taming the p.p. 807s. 2AMX has been heard on 20 visiting VKS Hams along the trip. 2RV still too busy fixing h.c. sets so he can give them all a bit when the customers ask them back. 2A9F is working h.c. sets to suspend or otherwise mount a Type A Mk. III on his newly acquired motor bike and if solved, then where to tack away the extra six volt battery. Absence of any Silver City notes any month may mean the National Safety Council can quote another case! -2A9W

NORTH COAST AND TABLELANDS
A Christmas and New Year saw quite a lot of the chaps on holidays and many of them visited other "beaks" we too had many visitors from other zones as well. We are always happy to see anyone travelling through; if you come this way at Easter, don't forget the Urunga "Do" and all the prizes that can be won. A newcomer to the air, Alan 2ARQ, holidayed near Grafton and was operating portable. 2ADT and 2JC spent quite a time at Urunga and worked regular 144 sited with 2XO. Hart put up a second tank on his shack but omitted to connect it up with the overflow from the original one. Last heard, Hart was paying for water to be carried -pinkie! -big mistake. Not satisfied with that, he fell twice from his launch, but caught a few taters. Heard 2YH 251H early in the year, leaving Perth 2YH by doing his health-made one thirty. Bill 2ZY of Marriwillebah has been heard around 40 again, reason for his absence was a speedboat and a YL. Len 2LR is busy re-building his shack which incidentally was "pre-inkbed" before entering Norm 2RK was very active in the N.F.D. and was heard rattling up a good score. 2A9P has managed to buy himself a house, so it looks like Audrey will have to turn him down the aisle each year just as predicted last month. Nightlight for the N. Coast boys was the VK4 "do" at Somerset Dam; it was a good show for a first effort and future gatherings have great possibilities. The representative by 2LR and 2A9H, both of whom enjoyed the hospitality of the VK4 boys and met many of their regular contacts for the first time. Your scribbles in journeying to Kyogle to meet Len 2LR, had the privilege of meeting many of the N.C. gang and takes the opportunity to thank all those who made the trip so pleasant. Antenna farms at 2XO, 2A9B, 2LH and 2LR were inspected and 2XO has more beams around the place than the Royal Australian Air Force has in the crowd next year. Would like to hear from the boys in Inverell and Narrabri. Don't forget. It's a date at Urunga at Easter.

HUNTER BRANCH
The big news this month is, of course, the result of the all band section of the Jubilee DX Contest. All extend hearty congrats to

fellow Hunter Hams 2DG, 2A9A and 2ZC, on not only maintaining, but putting on an even higher level, the good name of Hunter Branch. Keith 2DG was well rewarded for fine operating which he received from the Jubilee Jinx in first position in e.w. Harold 2A9A was not far behind in second place, followed by Jim 2ZC. First three placed. Double congrats to 2A9A for the marvellous effort in gaining second place in phone section also. We are very proud of you chaps and the job you've done. 2A9A and 2ZC were also winners in the game in first in phone section, we offer hearty congrats to 4KB. Keith can certainly handle a contest. We also congratulate the VK3 who caused the trouble.

President 2CS, accompanied by Bill 2XT and Johnny 2DZ, not forgetting Keith 2DG, reprs. the Hunter Branch at the New Dinner. The N.S.W. Divisional Dinner held in the "Big Smoke" Lionel puffed with pride when 'his boys' names were announced as winners in the Jubilee Contest, anyone understood he made an excellent speech in supporting the toast to the Federal Government, during the course of which he subtly reminded those present that the N.S.W. Divisional Dinner was the prize on behalf of the Government, was also a Hunter Ham!

Associate Ron Appleby also made the trip down to the Dinner. Bill 2XT, who has always been a hard worker for the W.I.A., really deserves a medalion himself for taking the boys (especially 2DG) down to the Jubilee Dinner. 2DG home to Matildand, he then drove him out to the h.c. station at Lochinvar where Keith 2DG, Bill 2XT and Johnny 2DZ were waiting. That's the Ham spirit, 2A9A co-operated and worked 2DG's shift.

Anna Bay was QTH chosen by our Hams in National Field Day and called on 2A9A. The advance party comprising Secretary 2SF, Ivan 2IS, Associates John Borg, Les Baber, Syd Daniels, with 2A5J, set up camp on the Saturday afternoon. 2A9A was in the wings about blunders of ace. 2IS felled four poles which were tied all over 2SF's utility and with his hanging on by seat of his pants, many dare-devil driving by Varley, a point very close to Tx site was safely reached. The poles were erected quickly despite scuttlerly shacks roaring up from the set of the set of the set in progress. This made the ops hungry and thirsty! and while 2IS buggy vanished in the direction of Nelson's Bay, Associates 2A9A and 2A9B returned to town for the night. Meantime, 2MF assisted by Ass 5YD prepared Dinner, while 2A5J sat and watched -until Greenhead and his boys arrived. Ivan 2IS kept busy with a scrumptious meal pie and a couple of squat tubes the emission of which caused 2SF and 2IS to modulate in a peculiar manner. Further 2A9B and 2A9C were in the wings. (No wonder the battery ran flat!) Ivan and Varley decided to make trip down to 2IS' shack where more tables and bedding were laid out for breakfast! John and Les returned shortly after and the first two Contest contacts were made soon after 1900. Then Chief op. 2A9A and George 2AGD arrived and Harold 2A9A had things running smoothly.

Harold's RA19 Transceiver did a mighty job with 5 watts phone and 7 watts cw. All went well until 1930 when heavy rain put 2A9A/P off the air until 2035 when we made a comeback for the last few minutes. The three who were in the Radio Club at the time they did grand job assisting in many ways. Harold was master operator, but was ably assisted by Varley, Ivan and Les.

A number of interest comes from Johnny 2DZ. He has returned from a letter written to him by his sister in London, who was present at a reception accorded to Capt. C. E. Caplan, of the "Hartford" Enterprise from the "Hartford" to the Hams fraternity and operates from his home town in New Jersey with c/a W2EXM. It was pleasing to see "Violet" 2A9A in the chair at the January meeting whilst President

15th B.E.R.U. CONTESTS, 1952

Unfortunately the rules for these Contests arrived late, but for publication in full. The event will be divided into three sections, namely:—(a) Senior telegraphy (max 1000 wpm); (b) Junior telegraphy (25 wpm max input); (c) Telephony (max licensed power).

The contest periods will be as follows: Telegraphy (usual hours) from 1900 to 1500 G.M.T., March 23 to 1500 G.M.T., March 30, 1952. Telephony: From 1500 G.M.T., April 5, to 1500 G.M.T., April 6.

Further details of the rules, etc., may be obtained from your Divisional Secretary or the Federal QST Manager.

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QUEENSLAND

TOWNVILLE ZONE (By VK4RW)

Ham activity in Townsville was never at a lower ebb than at the present time as one can well learn by listening on 20 mc. There once was a time when every night there were cross-town rag-chews when the conditions were unfavourable, now one hardly ever hears a local Ham even less a rag-chewing session. Once in a while a local will be on for a night and then high presto, back to other pursuits. One sign for the days when the local club had Enn AGE as Secretary who did yoman service in founding the club and putting it on a sound financial footing, now all remains of the club is a good bank balance.

4QL was heard again on c.w. the other night after being missing or perhaps not heard at this QTH. 4WR still chasing countries on c.w. and can be platively heard sending CQ DXK after 8 p.m. hoping that Africa will be heard on the long path. 4JH bobbed up on the W.L.A. frequency the other Sunday calling CQ—listen, next time, Joe. What about coming on more often any how, and did you manage to hear the VRM calling you on that frequency? I hope the QRW did not spoil it.

4RU has been removing his Tx and gear from the front room to the shack which has been built on level of house to save climbing hill to old location. Golf balls being so expensive, why not come on the air occasionally and let us hear how to hole out in one? 4LR now v.f.e. controlled and could be heard after 12 midnight calling South Africa—hope you make it. Run on the low power of 8 watts. 4XD heard from new QTH in Hermit Park working the VK3 boys! do you sigh for the old days spent in VK3 land now that we have a hot spell? 4DH missing from the band as is also 4GF.

4JE and family are holidaying in Brisbane. 4RW heard arguing with 4FW about why the South Africans were coming through at 3 p.m. one Sunday long or short path—any answers? Both were using beams. (Maybe I can help out Bob, I worked 13 of 'em with my beam pointed south and that was the way they had their beams pointed, so I guess they were coming via the short path; just the same, I personally wouldn't care to swim the distance. —Sub-Ed.)

MARYBOROUGH ZONE (By VK4GH)

4SE has settled in and is operating on 7 and 14 Mc. Reports that he misses his peanuts for breakfast. The local gang tried to find him a QTH on the fringe of the town, but Syd wound up near 4AL. 4AI building 14 Mc. converter and 50 Mc. rig. 4BC also on 50 Mc. rig. Ron extended his beam pole for 90 ft. vertical and it worked well while it lasted, for two weeks, after which the pole broke. 4AI and 4BG haunting 14 Mc. as usual.

4GH re-building rig. Having seaside holidays without portable gear. 4KG got back into the R.A.A.F. Arch 4CB worked his 100th country on phone. Only has to get the cards now.

CLARE ZONE

Congratulations to 4FK on being elected the new Federal Councillor. Arthur should be a worthy representative at the next Federal Convention to be held in Sydney. Heard 4VJ back on the air after a short spell in hospital. Sorry to hear of your illness, and hope you are OK again. 4FT would like to get hold of a really good crystal set to replace the H.R.O. as the number of knobs on the front panel gets really confusing at times. Have not heard 4FN on lately. 4TT is again on the air from his new QTH. Tom has re-built and is now running the full 100 watts to a pair of 807s. 4RZ and 4IN are heard quite often during evenings looking for local contacts. 4CI is at present holidaying in N.S.W. and operating portable VK3.

4WD has a simple method of suppressing both side-bands by not switching on the modulator, but very difficult to copy. Bill, 4VA is back again after a short holiday in Victoria. Bill sent quite a lot of time at Cammerlang with 3VD and from all accounts a good time was had by all.

— . . . —

SOUTH AUSTRALIA

The monthly general meeting of the VKS Division for January was held in the clubrooms to the representative gathering that we have become so accustomed to, in fact we take the large crowd so much for granted that I feel that we should attend a meeting of one or other of our kindred organisations, and then we might realise that we are very fortunate in having such a roll-up. The guest speaker for the

evening was Clarrie Castle (8KL) and his subject was "Radio Control of Model Aeroplanes." This lecture broke new ground for quite a lot of those present because whilst many of us have read a good deal on the subject, few have had any practical experience. Clarrie tackled the subject in a workmanlike and illustrative manner by bringing along a working model and fully describing its construction, and also the many heartbreaking failures that he experienced before the job was a success. His talk undoubtedly created interest among the members present, as was evidenced during question time, and it was also apparent that Clarrie was intensely proud of his model, not as a model alone, but principally as a problem that Amateur Radio had "solved." He delivered the talk in a very chatty and informal manner and the more that I hear this type of lecture, the more I am convinced that it is the best manner of approach to adopt with a gathering such as ours with its variety of vocations and standards of technical knowledge. Nice work Clarrie. The vote of thanks was given by Reg SQR who in his remarks said that he had personally seen the model perform at various times and could also the many time and patience that had gone into its construction. The response to the vote of thanks clearly indicated the success of the lecture.

The principal business for the evening was the proposed increase in the annual subscription, and strangely enough, no member spoke against the increase, and quite a number spoke for it, apparently realising that with the increased cost of everything these days, the increase was inevitable. Quite a number, however, spoke suggesting ways and means of cutting unnecessary expense down to a minimum, and all these suggestions will be given careful consideration by Council throughout the coming financial year. Federal Executive came in for its share of criticism, from a financial angle, but as I am apparently only permitted to mention F.E. when praised, I therefore can say no more regarding criticism.

Among the visitors were the following, Messrs. Frise, Garton, Thomas, Drage, and Pfeiffer, and so all these gentlemen will come again, you are more than welcome. Reg SRR gave the meeting a brief resume of all that has so far been done in connection with our exhibit in the coming Royal Adelaide Exhibition, and also asked that all members give some thought to the preparation of a skeleton staff roster, to be in attendance at the exhibit each night. Frank

Received 100 p.c. O.K. except name and report... WELL!!!

(That's probably all he told you anyway)

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TASMANIA

The main item of interest to report on activities during January was the very successful field day which was held on Sunday, 29th. Transmitter party on this occasion was TDA, TKC and TKL. Desley with 144 Mc. was a last-minute member. Location was at Bowrah, the Tx's being concealed in thick scrub, short of the road. Desley with 144 Mc. and TKC used were 3.5 and 144 Mc. "Joe" was the easy winner of the hunt, locating the Tx within 4 minutes from commencement of operation, while TKC took 37 minutes and TKL 37 minutes after TDA's winning burst. Social activities were organised by Burney Watson who arranged a beer ditty, a pull-down and a game for all kiddies in attendance. A "guess the frequency" competition of a coil and condenser was held and won by Tony Allen. The frequency being 13 Mc. between 23 and 110 Mc. were made by various members; believe TBA was 95 Mc. out in his calculations. Desley took 1000 Hz. pull-down competition for the ladies was held which caused much amusement. Judging from comments made, the next day will most probably be held after the annual general meeting on a larger scale and trust more members will participate.

For the benefit of members who have purchased the TR1143 v.h.f. rigs, a lecture on the conversion of them to 144 Mc. will be made by TKC at the April meeting. The transmitter received, this unit of Bob's, performs remarkably well and his signal can usually be heard any evening on this band. It seems the general opinion is that the Hamas is 144 Mc. 288 Mc. which is very encouraging in the fact of our need to use all available bands. A party of 12 members of TDA and TKC are going to the top of Mt. Wellington on 2nd February in an attempt to make contact with the north and north-west of the State which we trust prove successful.

Elimination of b.e.i. which has retarded activity by TKA has now been successfully overcome as it seems Ken will be pounding the air with his transmitter. After some time, TRX too troubled with similar complaint, while TRM has intentions of a new type aerial for the TKA. TRM has arranged for the restriction of activity by TNC who mainly works c.w. on 30 mc. A short trip to Devonport caused the absence of TGA from our last meeting. TRM has settled in the new home at Sandy Bay. Participants in the National Field Day Contest from the south only were TBA, TKC, TKL, TKM, TKP, TKR, TSH, operating again from Penna. Lack of interest is attributable to the short duration of this contest, although next year and the old times of operating will be available once again.

A temporary loss to VKI is the absence of TIB who has moved on to Japan for a while. TGL who has moved to TGA has taken a keen interest in Institute affairs and was a prime mover in the organisation of the emergency network during the last few years. Several intentions are to operate on 30 mc. soon as time permits and knowing Jack this won't be long. Quite a lot of worry in the form of a new transmitter for TKL, fairly quiet during the last few months and it is the thoughts of all members of this Division that work will be done in the near future. A familiar call again on the Amateur bands.

Northern visitor here for a day or so was TDB; subject to restriction of times, he was not able to visit any members during the week. Johnny Grace frequenting radio supply houses recently purchasing quantity of radio equipment. Several intentions are to operate on 30 mc. soon as time permits and knowing Jack this won't be long. Quite a lot of worry in the form of a new transmitter for TKL, fairly quiet during the last few months and it is the thoughts of all members of this Division that work will be done in the near future. A familiar call again on the Amateur bands.

Main business for the February meeting was discussed and arrangements for the Annual General Meeting to be held on 1st March, concluding with a talk by Mr. Ken Watson. The meeting was well attended (see Terminals) which was appreciated by all in attendance. A vote of thanks was passed for the lecture and the meeting concluded at 1000 hours.

NORTHERN TASMANIAN ZONE

Congratulations have been pouring in to T.L.Z. from all parts over his magnificent 8 mc. work when 30 Mc. opened up. Yes, Col. "knocked 'em off in a row": VK2, VK3, VK4, VK5, VK6, VK7, VK8, VK9, VK10, VK11, VK12, VK13, VK14, VK15, VK16, VK17, VK18, VK19, VK20, VK21, VK22, VK23, VK24, VK25, VK26, VK27, VK28, VK29, VK30, VK31, VK32, VK33, VK34, VK35, VK36, VK37, VK38, VK39, VK40, VK41, VK42, VK43, VK44, VK45, VK46, VK47, VK48, VK49, VK50, VK51, VK52, VK53, VK54, VK55, VK56, VK57, VK58, VK59, VK60, VK61, VK62, VK63, VK64, VK65, VK66, VK67, VK68, VK69, VK70, VK71, VK72, VK73, VK74, VK75, VK76, VK77, VK78, VK79, VK80, VK81, VK82, VK83, VK84, VK85, VK86, VK87, VK88, VK89, VK90, VK91, VK92, VK93, VK94, VK95, VK96, VK97, VK98, VK99, VK100. Col. Now T.L.Z. is out for 144 Mc. DX and a 12 element beam now graces the skyline at Knight Street, Launceston.

Another who is becoming beam conscious is zone president TRX who is contemplating a 32 element on 30 mc to raise that elusive zone

needed for W.A.Z. Ray, who has been spring-cleaning the shack, managed to put the works together and is again on the air.

Zone secretary TAM has been holidaying, so missed our February meeting. A visitor for a few hours was TCF from Queensland. TCA, who is now living in Launceston, may be heard on 7 Mc. TCL has returned to 1 Mc. after a long absence. THR, TOR, TTE and THY are not very active at present because of house-building or too much work.

TGM is in the throes of constructing a 100 watt 144 Mc. Tx in the meantime. TGM has been very active on 7 Mc. phone despite poor conditions. From TLM comes advice that a new Tx is taking shape and should be ready soon. TIS is well pressed on way to G-land and may have reached there by the time these notes appear.

For a February meeting night TXW brought along a low-powered phone Tx for portable work on 80 and 40 mc. At our meeting a warm welcome was extended to new Associate Class Kitten.

Finally don't forget that the March meeting is the Annual Meeting, to roll up in force. The meeting will be in the Trades Hall since the old meeting room in the King's Hall Chambers is no longer available.

CORRESPONDENCE

The opinions expressed in these letters are the individual opinions of the writer, and do not necessarily coincide with those of the publishers.

18 Nimmo St. Essendon, W.S. Vic.

Editor "A.R.", Dear Sir,

Having been a subscriber in receiver design for some years, both commercially and as an Amateur, I read with interest the notes at the foot of 13 February A.R.

I would like to raise a few points. I realise that destructive criticism is always very easy, but I feel that the remedy suggested by your contributors is rather a sweeping generalisation and tends to dodge what may be the main issue. Firstly what do we understand by "sensitivity"? Surely this implies a comparison of this is on a signal-to-noise ratio basis? All commercial specifications adopt this method and assume a standard noise level. The final output power at which this ratio is obtained; e.g., "2 uv. for 10 db signal noise ratio at 30 mv. output" would be typical.

I submit that a receiver which is sensitive, the receiver was unduly noisy," is a contradiction in terms.

The fact that in this particular receiver the noise from the 2nd mixer was extensive leads one to wonder whether some other fault is not present and that the noise is not some fundamental defect in the design.

It is admitted that altering the 2nd mixer to a triode system might reduce the noise generated by it, but so will many other expedients of varying degrees of inelegance. I think, however, that of those frequencies one should not be seeking to eliminate noise at that stage as the extent of the noise is negligible. The other advantages of the 6X8 in the conventional connection.

With values such as the 6X8 it can be shown that providing there is a voltage gain of about 10 times between the signal source and the 6X8 grid, the noise generated by the 6X8 can be neglected compared with the total noise voltage at its own grid.

The assumption is that the first or only valve before the 6X8 generates a noise voltage, referred to its own grid, of about 1 uv. This should be the case with a modern i.f. pentode with reasonably first class components.

Very non-sinusoidal waveform of the 6X8 oscillator would possibly upset this picture and would be due to excessive feedback in this section.

In the design of a double superhet I would say that one should aim for a signal of 30 uv. at the 2nd mixer grid, assuming a noise level, even assuming 1 uv. at the aerial terminals, as one would have presumably at least two stages before this point.

A suggested receiver might be: r.f. 1st mixer, high I.f. amp., 2nd mixer, which should produce a great enough signal at the 2nd mixer grid to make its noise completely negligible. The receiver sensitivity would then depend, as always, on:

1. The performance of the r.f. stage and its associated antenna circuit.
2. The noise generated by the first mixer (same arguments as already set for second mixer apply here).
3. The overall bandwidth of the receiver (not here under discussion).

Do not let us confuse gain with sensitivity.

—E. H. RANFT, VK1NR.

10 Victoria Ave., Rose Park, S.A.

Editor "A.R." Sir,

In the VKS monthly notes for February, I included a paragraph which opened with "Federal Executive Committee have placed on a pedestal by VKS members together with Ned Kelly, three card tricksters, and thimble and pea shooters." I have been asked to give the reason for this elevation, together with pungent comment on their lack of financial equilibrium. Federal Executive Committee have issued an order that the red pencil be run through the offending paragraph and sent a letter to the VKS Division voicing their annoyance. I have no quarrel with this as I do think for one second that it would be permitted to see the light of day in the magazine, and it has achieved its object in getting under the skin of F.E., which was, after all, the only reason it was written.

However, quite a number of VKS members, who were the instigators of the offending paragraph, have approached me and are suggesting that I have failed in my duty by refusing to write a suitable paragraph when requested. I would therefore, Mr. Editor, appreciate some explanation, however small, from you as to why the paragraph referred to was deleted. I would also appreciate some explanation, however small, from you as to why the paragraph referred to was deleted. I would also appreciate some explanation, however small, from you as to why the paragraph referred to was deleted. I would also appreciate some explanation, however small, from you as to why the paragraph referred to was deleted.

In closing I would like to say that it is my personal opinion that the essential difference between F.E. and an ostrich, is the fact that an ostrich cannot manufacture its own sand.

—WARWICK W. PARSONS, VKSPS.

(The paragraph in question was referred to F.E. (as do all others which fall into the same category) under an item which appears in the same book, and under the heading "The responsibilities of Federal Council concerning "A.R." shall include—

- (a) The preparation of Editorials.
- (b) All opinions concerning Federal W.A. matters and/or contacts with other bodies.
- (c) Any matters which might prejudice relations between the Division or between Amateurs generally."

The matter from which the whole question arises, i.e. the purchase of office equipment, is covered in the 1956 Constitution of the Convention. See "A.R." for June, 1951, page 7, item 8.—Editor.

HAMADS

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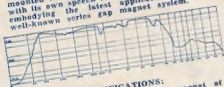
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